TC-W301/W306

SERVICE MANUAL

US Model
TC-W301
TC-W306

Canadian Model
E Model
Australian Model
TC-W301

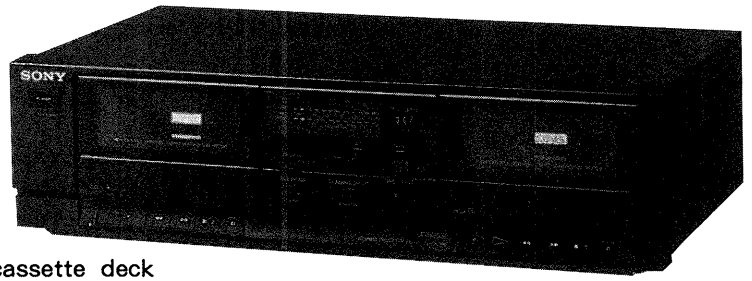


Photo : TC-W306

TC-W306 is the cassette deck section in SEN-501.

TC-W301 is the cassette deck section in SEN-301.

SPECIFICATIONS

Recording system
4-track 2-channel stereo
Fast-forward and rewind time
Approx. 120 sec. (with C-60 cassette)
Bias AC bias
Signal-to-noise ratio (NAB, at peak level)

Dolby NR switch / Cassette	OFF	ON
TYPE IV (Sony METAL-ES)	58 dB	65 dB
TYPE II (Sony UX-S)	56 dB	63 dB
TYPE I (Sony HF-S)	54 dB	61 dB

Total harmonic distortion
1.0% (with Sony METAL-ES cassette)

Frequency response (DOLBY NR OFF)

TYPE IV cassette (Sony METAL-ES)	30 – 15,000 Hz (±3 dB) 30 – 13,000 Hz (0VU recording)
TYPE II cassette (Sony UX-S)	30 – 14,000 Hz (±3 dB)
TYPE I cassette (Sony HF-S)	30 – 13,000 Hz (±3 dB)

Wow and flutter 0.12% WRMS (NAB)

Input (TC – W306)

Connector	Type	Sensitivity	Impedance
LINE IN	phono	77.5 mV (–20 dB)	50 k ohms

Model Name Using Similar Mecanism		TC-W295/W390
Tape Transport Mechanism Type	DECK A	W301 : TCM-180VAH1
		W306 : TCM-180VAH5
	DECK B	W301 : TCM-180VBH1
		W306 : TCM-180VBH5

Output (TC – W306)

Connector	Type	Rated output level	Load impedance
LINE OUT	phono	0.44 V(–5 dB) at load impedance 47 k ohms	over 10 k ohms

General (TC – W306)
Power requirements
120 V AC, 60 Hz
Power consumption
15 W
Dimensions Approx. 430 × 118 × 250 mm (w/h/d)
(17 × 4 3/4 × 9 7/8 inches)
including projecting parts and controls
Weight Approx. 3.4 kg (7 lbs 8 oz)

Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"DOLBY" and the double-D symbol ⊡⊡ are trademarks of Dolby Laboratories Licensing Corporation.

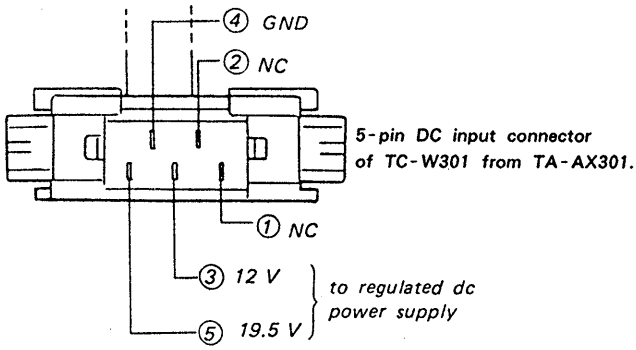
STEREO CASSETTE DECK

SONY®

SERVICING NOTE FOR TC-W301

[To supply B+ voltage]

When this model alone operates, connect the unit to the regulated DC power supply, since power of this model is fed from TA-AX301.



SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety check before releasing the set to the customer:
Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

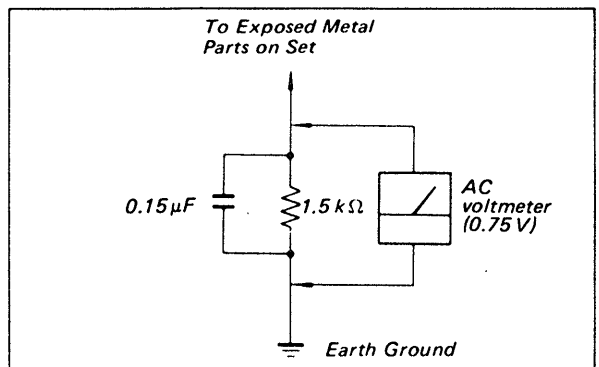


Fig. A. Using an AC voltmeter to check AC leakage.

SECTION 1
ADJUSTMENTS

1-1. MECHANICAL ADJUSTMENTS

PRECAUTION

1. Clean the following parts with a denatured-alcohol-moistened swab:
   record/playback head — pinch roller
   erase head — rubber betls
   capstan — idlers

Torque Measurement (DECKS A and B)

Torque	Torquement	Meter reading
FWD	CQ-102C	35 – 70 g•cm (0.49 – 0.97 oz•inch)
FF, REW	CQ-201B	70 – 160 g•cm (0.98 – 2.22 oz•inch)

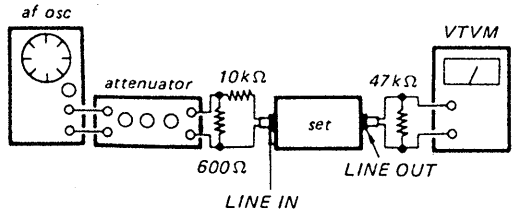
1-2. ELECTRICAL ADJUSTMENTS

1. Demagnetize the record/playback and erase head with a head demagnetizer.
2. Do not use a magnetized screwdriver for the adjustments.
3. After the adjustments, apply suitable locking compound to the parts adjusted.
4. The adjustments should be performed with the rated power supply voltage unless otherwise noted.
5. The adjustments should be performed in the order given in this service manual. (As a general rule, playback circuit adjustment should be completed before performing recording circuit adjustment.)
6. The adjustments should be performed for both L-CH and R-CH.

• Switches and controls should be set as follows unless otherwise specified.
DOLBY NR switch: OFF
TAPE SELECT switch : TYPE I (NORMAL)

• Standard Record:
Deliver the standard input signal level to the input jack and set the REC LEVEL control to obtain the standard output signal level.

– Record Mode –



Note: Before recording short CN505 with a lead wire, otherwise MUTING functions and output signal does not appear at LINE OUT terminals.

Standard Input Level

	LINE IN
source impedance	10 kΩ
input level	0.25V (–10dB)

Standard Output Level

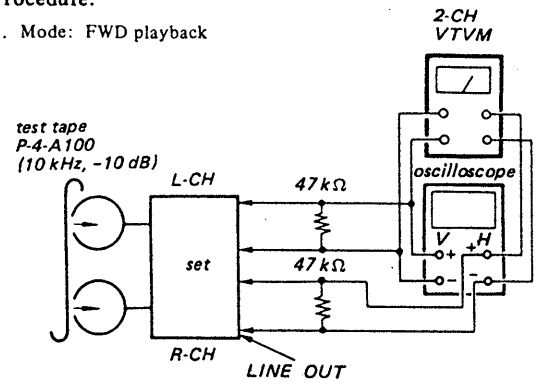
	LINE OUT
load impedance	47 kΩ
output level	0.44V (–5dB)

Record/Playback Head Azimuth Adjustment

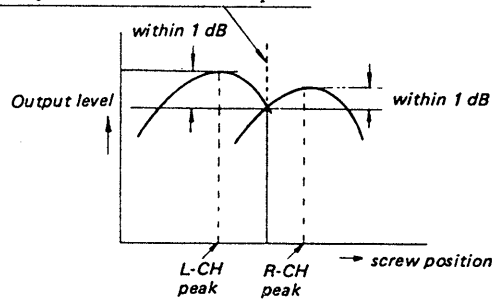
DECK A
DECK B

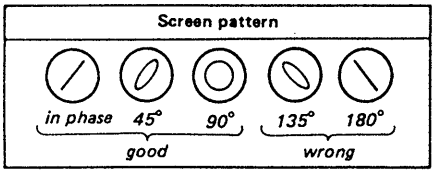
Procedure:

1. Mode: FWD playback



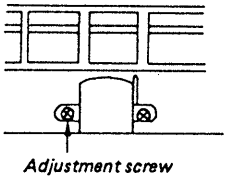
2. Turn the adjustment screw and check output peaks. If the peaks do not match for L-CH and R-CH, turn the adjustment screw so that outputs match within 1 dB of peak.





3. After the adjustment, apply suitable locking compound to the adjustment screw.

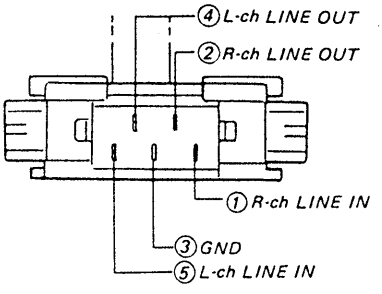
Adjustment Location:



Test Tape:

Type	Signal	Used for
P-4-A100	10kHz, -10dB	Azimuth Adjustment
P-4-L300	315Hz, 0dB	Level Adjustment
WS-48A	3kHz, 0dB	Tape Speed Adjustment

[LINE IN/OUT for TC-W301] : CN321

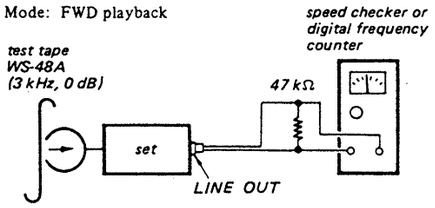


Tape Speed Adjustment

DECK A
DECK B

Procedure:

Mode: FWD playback



1. Short the pins of CN504 with a wire to set the high speed mode.

Measurement limits: high speed

Speed checker	Digital frequency counter
±0.3%	6,000 ± 20 Hz

Frequency difference between the beginning and the end of the tape should be within 1.5% (90 Hz).

Adjustment Location:

DECK-A: RV501
DECK-B: RV503

2. Remove the wire in step 1. (CN504)

Measurement limits: normal speed

Speed checker	Digital frequency counter
±0.3%	3,000 ± 10 Hz

Frequency difference between the beginning and the end of the tape should be within 1.5% (45 Hz).

Adjustment Location:

DECK-A: RV502
DECK-B: RV504

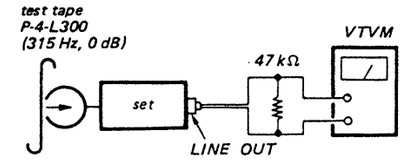
3. If the specifications are not satisfied, repeat step 1 and 2.

Playback Level Adjustment

DECK A
DECK B

Procedure:

Mode: FWD playback



Adjust,
DECK-A: RV101 (L-CH), RV201 (R-CH)
DECK-B: RV102 (L-CH), RV202 (R-CH)
so that the measurement limits are satisfied.

Measurement limits:

LINE OUT level : 0.130 - 0.146 V (-15 ± 0.5 dB)
level difference between the channels: within 0.5 dB

Record Bias Current Adjustment

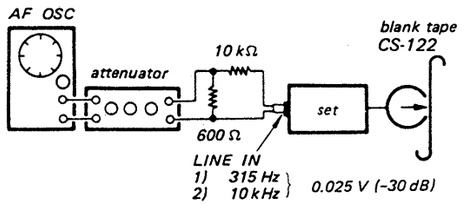
DECK B

Setting:

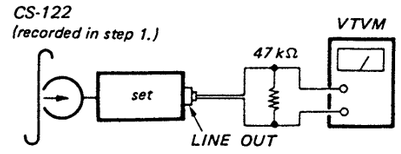
REC LEVEL control: standard record (See page 3.)

Procedure:

1. Mode: record



2. Mode: playback



Playback the tape record in step 1. If the measurement limits is not satisfied, adjust C408-1 (L-CH), C408-2 (R-CH) and repeat steps 1 and 2.

Measurement limits :

The LINE OUT level of 10 kHz signal relative to that of 315 Hz: -0.5 dB to 0.5 dB.

Record Level Adjustment

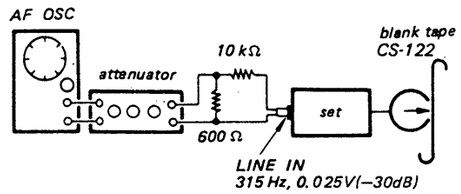
DECK B

Setting:

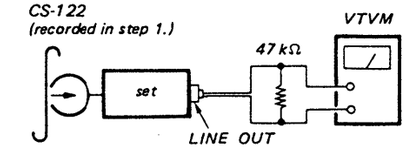
REC LEVEL control: standard record (See page 3.)

Procedure:

1. Mode: record



2. Mode: playback



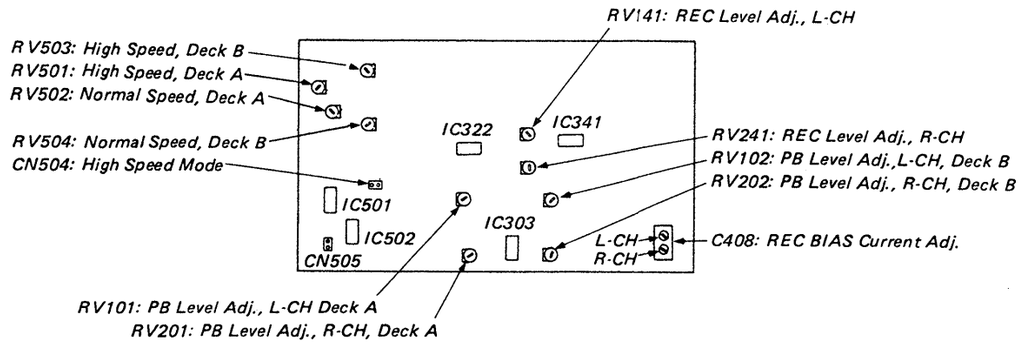
Playback the tape recorded in step 1. If the measurement limits is not satisfied, adjust RV141 (L-CH), RV241 (R-CH) and repeat steps 1 and 2. If the level difference between the channels is still 1 dB or more, divide it to the both channels on the basis of −5 dB.

Measurement limits:

LINE OUT level : 0.041 - 0.045 V (-25 ± 0.5 dB)

Adjustment Location:

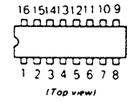
[AUDIO BOARD] *– COMPONENT SIDE –*



SECTION 2
DIAGRAMS

2-1. SEMICONDUCTOR LEAD LAYOUTS

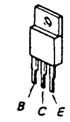
CXA1100P
CXA1198AP
TC4051BPHB



2SC945-P
2SC1815Y
2SD1387

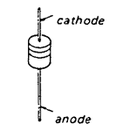
IR2E31A

2SD2012

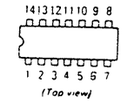


LA3160

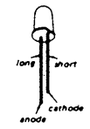
HZS6A1L
HZL11CH2



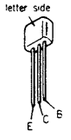
MC14066BCP
μPD4011BC
TC4001BP



SEL1210S-C
SEL1910A-C

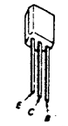


2SC3623A-LK

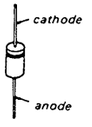


SEL4214S

DTA114ES
DTA144ES
DTC114ES
DTC144ES
2SC2603-EF



1SS202-1
10E2N

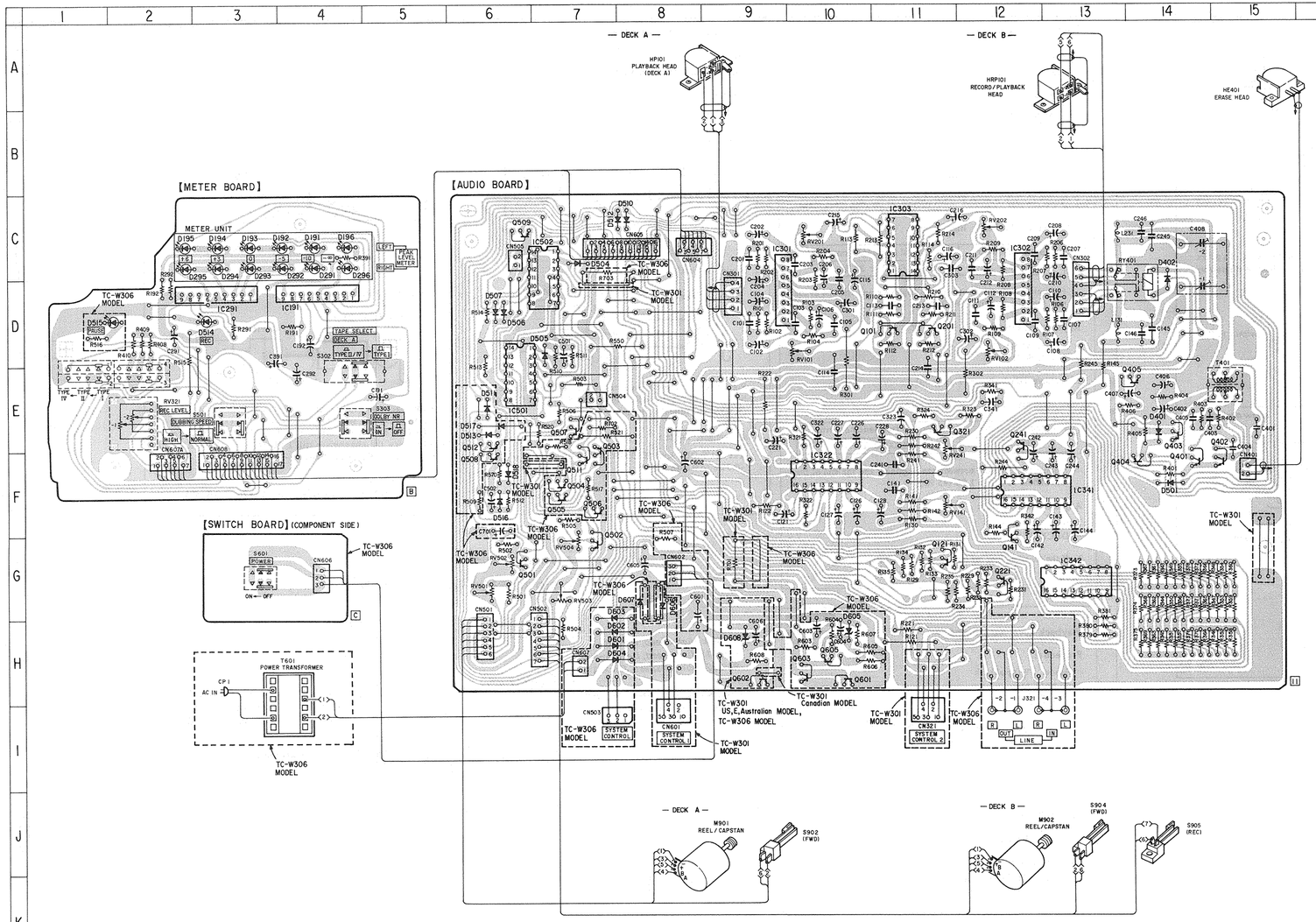


● SEMICONDUCTOR LOCATION

Ref. No.	Location	Ref. No.	Location
D191	C-4	IC191	D-4
D192	C-4	IC291	D-3
D193	C-3	IC301	C-9
D194	C-3	IC302	C-12
D195	C-2	IC303	C-11
D196	C-4	IC322	F-10
D291	C-4	IC341	F-13
D292	C-4	IC342	G-13
D293	C-3	IC501	D-6
D294	C-3	IC502	C-7
D295	C-2		
D296	C-4	Q101	D-11
D401	E-14	Q121	G-11
D402	C-14	Q141	F-12
D501	F-14	Q201	D-11
D504	C-7	Q221	G-12
D505	D-7	Q241	E-12
D506	D-6	Q321	E-11
D507	D-6	Q401	E-14
D510	C-8	Q402	E-15
D511	E-6	Q403	E-14
D512	C-7	Q404	E-14
D513	E-6	Q405	E-14
D514	D-3	Q501	G-6
D515	D-2	Q502	F-7
D516	F-6	Q503	E-7
D517	E-6	Q504	F-7
D518	F-6	Q505	F-7
D601	H-7	Q506	F-7
D602	G-7	Q507	E-7
D603	G-7	Q508	E-6
D604	H-7	Q509	C-6
D605	G-10	Q511	E-7
D606	G-8	Q512	E-6
D607	G-8	Q601	H-10
D608	H-9	Q602	H-9
		Q603	H-10
		Q605	H-10

2-2. PRINTED WIRING BOARDS

● See page 5 for semiconductor lead layouts.



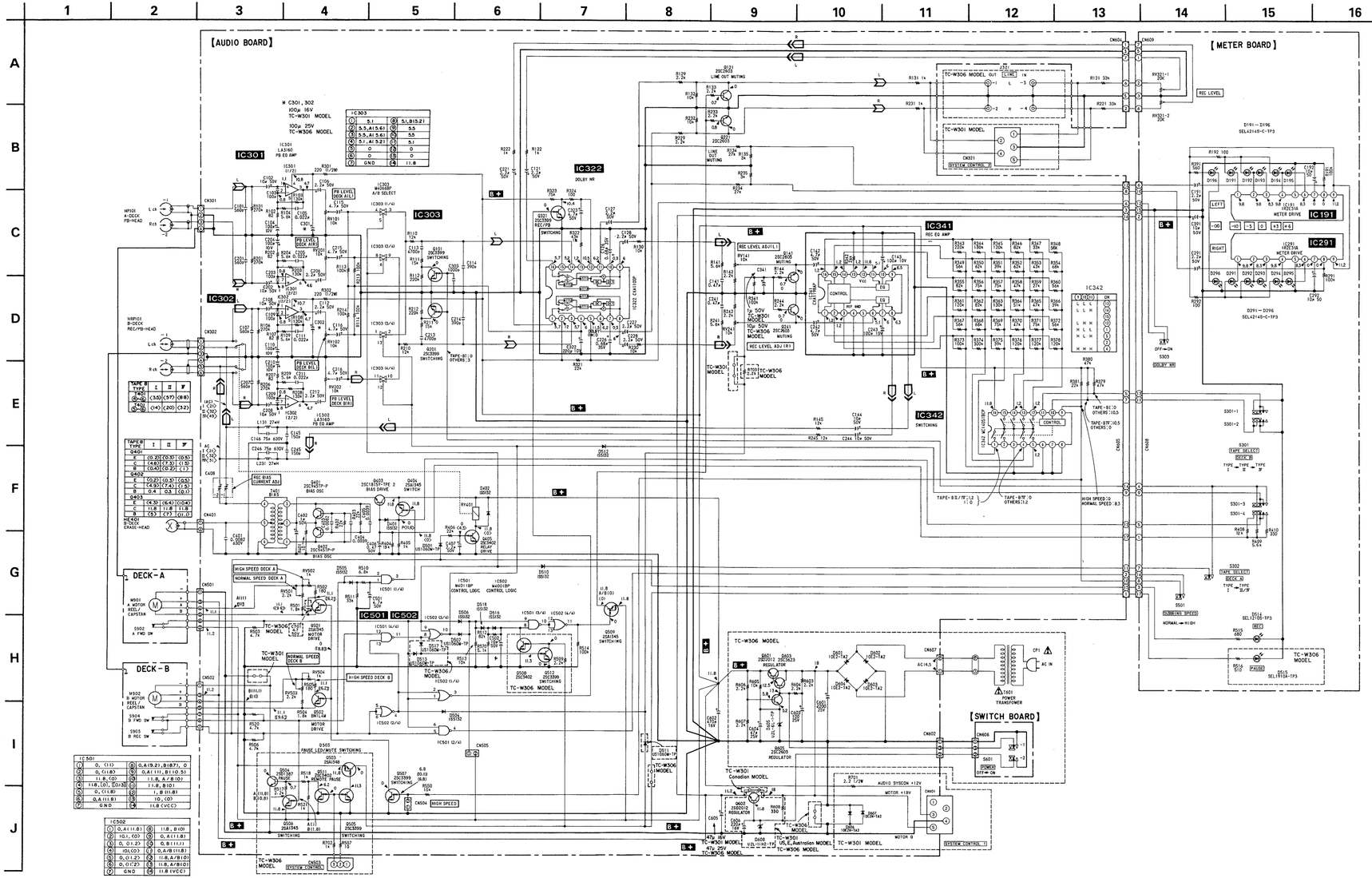
Note on Mounting Diagram:

Note:

● ○—— : parts extracted from the component side.

● ■ : parts mounted on the conductor side.

2-3. SCHEMATIC DIAGRAM


【AUDIO BOARD】
【METER BOARD】
【SWITCH BOARD】
IC301
IC303
IC322
IC341
IC342
IC302
IC291
IC191
DECK-A
DECK-B
TC-W306 MODEL
TC-W301 MODEL
TC-W301 Condition MODEL
TC-W306 US,E,Australian MODEL
TC-W301 US,E,Australian MODEL
TC-W306 MODEL
TC-W301 MODEL
TC-W306 MODEL
TC-W306 MODEL
TC-W306

SECTION 3
EXPLODED VIEWS

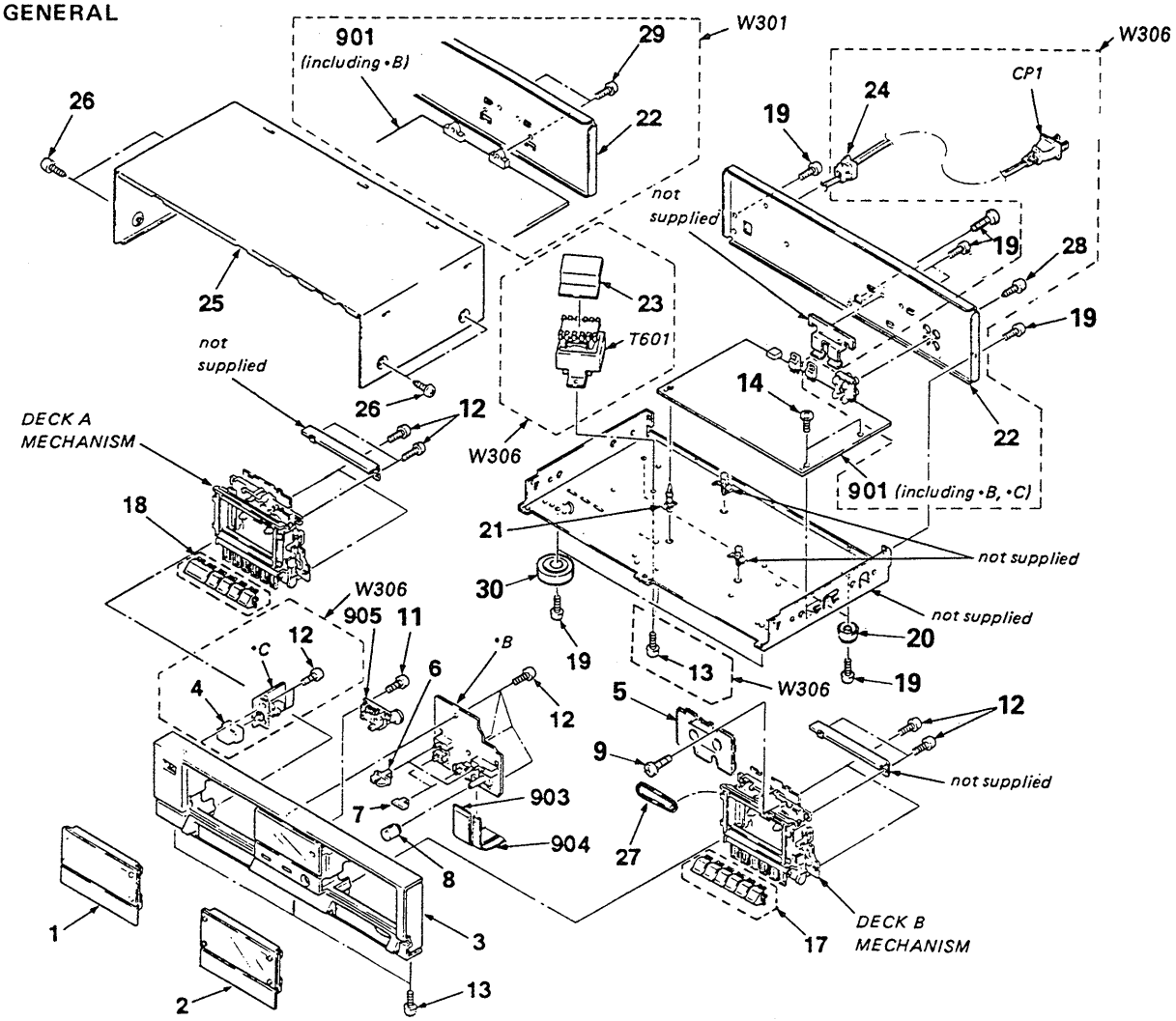
NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts
  Example:
  (RED) ... KNOB, BALANCE (WHITE)
  ↑ ↑
  Cabinet's Color Parts' Color
- AUS : Australian model

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifé.

(1) GENERAL

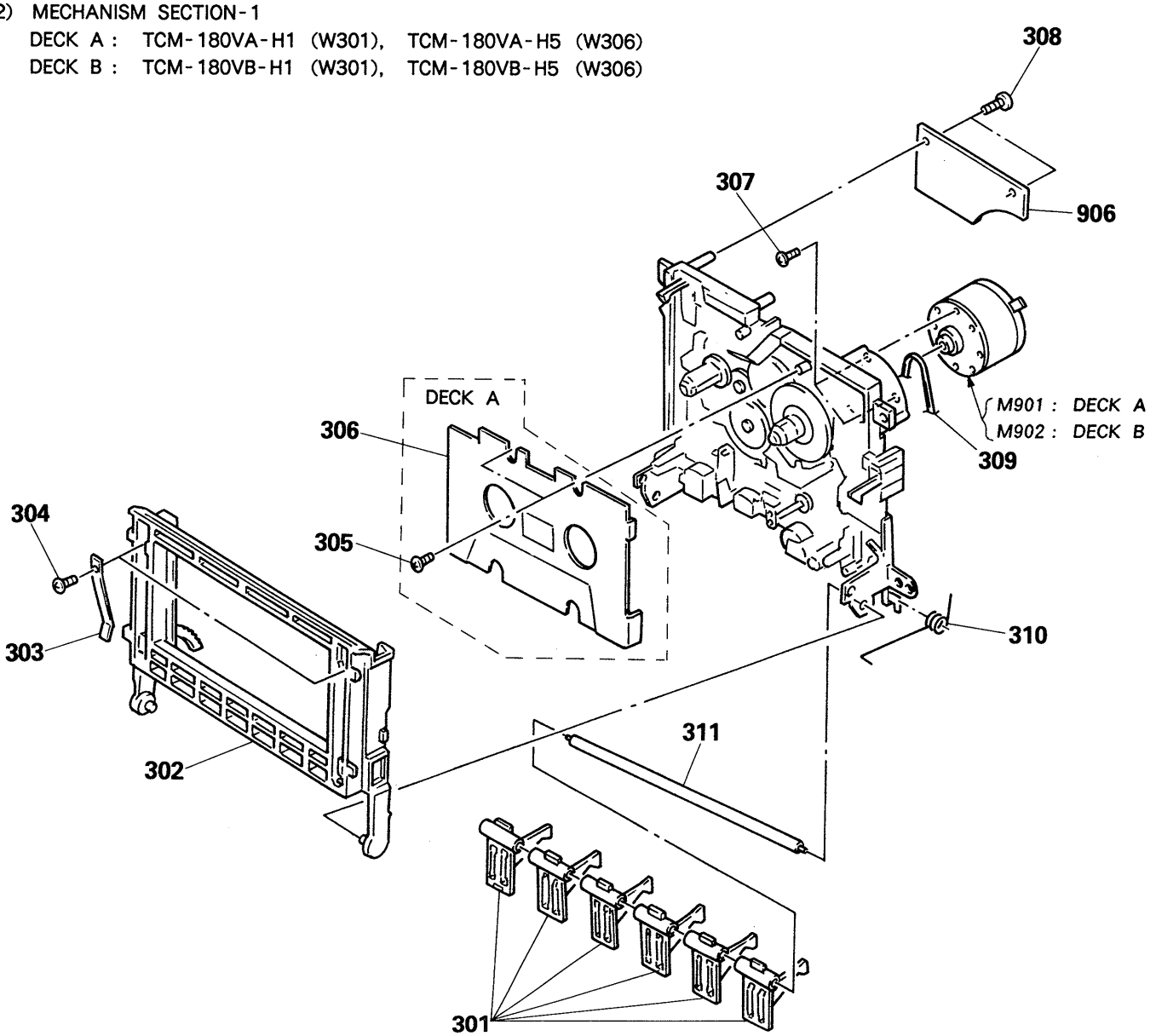


No.	Part No.	Description	Remarks
1	X-3340-190-1	LID (A) ASSY, CASSETTE	
2	X-3340-189-1	LID (B) ASSY, CASSETTE	
3	X-3340-191-1	(W301)...PANEL ASSY, FRONT	
	X-3346-302-1	(W306)...PANEL ASSY, FRONT	
4	3-354-912-01	(W306)...KNOB, POWER	
5	X-3358-214-1	PLATE ASSY, ORNAMENTAL	
6	3-346-379-01	KNOB (SLIDE)	
7	3-346-381-01	BUTTON	
8	3-349-039-01	KNOB (VOL)	
9	7-685-133-19	SCREW +BTP 2.6X6 TYPE2 N-S	
11	4-928-635-01	SCREW, +BV (2.6X8) TAPPING	
12	4-928-635-21	SCREW, +BV (2.6X10) TAPPING	
13	7-682-548-04	(W306)...SCREW +BVTT 3X8 (S)	
14	4-886-821-11	(W301)...SCREW, S TIGHT, +PTTWH 3X6	
	7-682-548-09	(W306)...SCREW, +BVTP 3X8 (S)	
17	3-349-043-11	BUTTON (BLOCK B)	
18	3-349-042-11	BUTTON (BLOCK A)	
19	7-682-548-09	SCREW +BVTT 3X8 (S)	
20	X-4904-496-1	FOOT ASSY	
21	*3-346-265-11	HOLDER, PC BOARD	
22	*3-349-023-21	(W301)...PANEL, BACK	
	*3-349-023-31	(W306)...PANEL, BACK	
23	*3-327-855-01	(W306)...COVER (TRANSFORMER)	
24	*3-703-571-11	(W306)...BUSHING (S) (4516), CORD	
25	3-327-856-61	CASE	
26	3-704-366-01	SCREW (CASE) (M3X8)	
27	3-499-042-XX	BELT, COUNTER	
28	7-621-849-00	(W306)...SCREW, TAPPING	
29	7-685-646-79	(W301)...SCREW, +BVTP 3X8 TYPE 2	
30	X-3340-138-1	(W301:US,Canadian,W306)...FOOT ASSY	
	X-3340-173-1	(W301:E,AUS).....FOOT ASSY	
901	*A-2006-071-A	(W301:US,E,AUS)...MOUNTED PCB, AUDIO	
	*A-2006-072-A	(W306).....MOUNTED PCB, AUDIO	
	*A-2006-138-A	(W301:Canadian)...MOUNTED PCB, AUDIO	
903	1-574-724-11	WIRE, FLAT TYPE (17 CORE)	
904	1-574-723-11	WIRE, FLAT TYPE (7 CORE)	
905	1-548-596-61	COUNTER, TAPE (MIDDLE TYPE)	
CP1	⚠1-558-945-11	(W306)...CORD, POWER (POLAR.SPT-1)	
T601	⚠1-449-256-11	(W306)...TRANSFORMER, POWER	

(2) MECHANISM SECTION-1

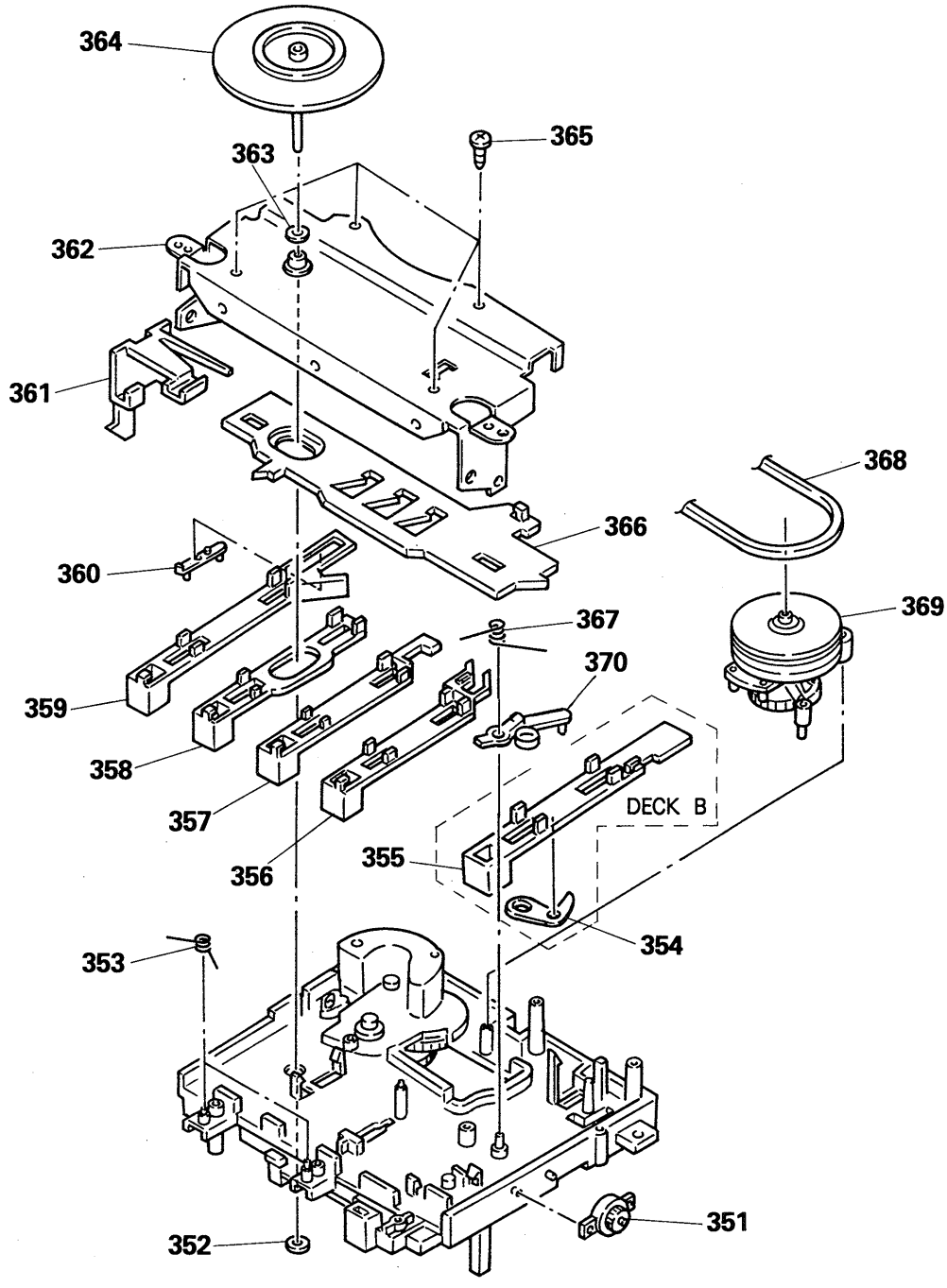
DECK A : TCM-180VA-H1 (W301), TCM-180VA-H5 (W306)

DECK B : TCM-180VB-H1 (W301), TCM-180VB-H5 (W306)



No.	Part No.	Description	Remarks
301	3-358-271-01	LEVER (BUTTON BASE A)	
302	3-358-266-01	HOLDER, CASSETTE	
303	3-358-209-01	SPRING (CASSETTE HOLDER), LEAF	
304	7-685-103-19	SCREW +P 2X5 TYPE2 NON-SLIT	
305	7-685-132-19	(DECK A)...SCREW +BTP 2.6X5 TYPE2 N-S	
306	X-3358-214-1	(DECK A)...PLATE ASSY, ORNAMENTAL	
307	7-621-775-20	SCREW +B 2.6X5	
308	7-685-133-19	SCREW +BTP 2.6X6 TYPE2 N-S	
309	3-358-272-01	BELT (A2)	
310	3-358-287-01	SPRING (LOADING A), TORSION	
311	3-358-242-01	SHAFT (BUTTON SHAFT)	
906	*1-635-158-11	PC BOARD, SW	
M901	X-3358-212-1	MOTOR (B) ASSY	
M902	X-3358-212-1	MOTOR (B) ASSY	

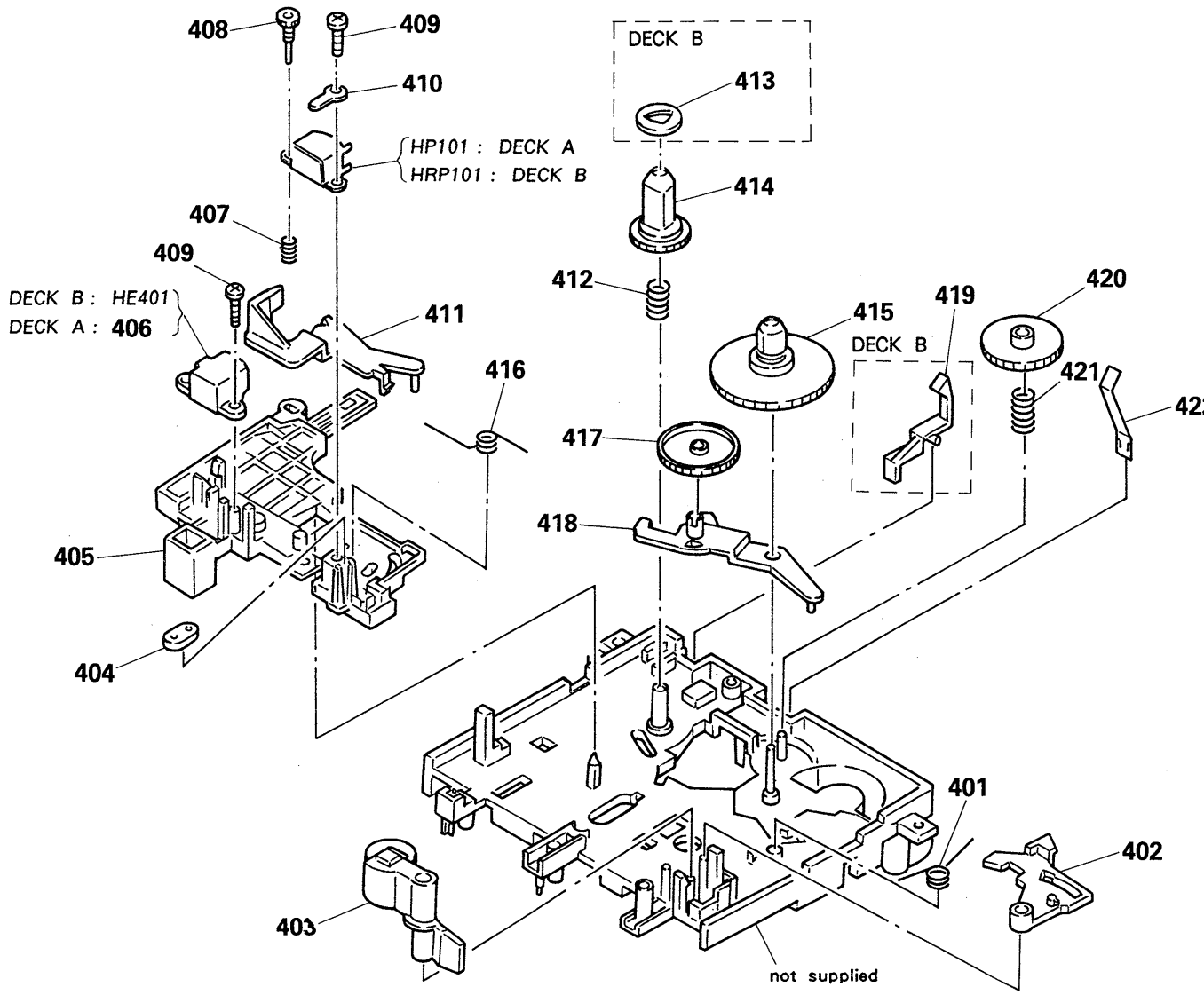
(3) MECHANISM SECTION-2



No.	Part No.	Description	Remarks
351	3-319-224-31	DAMPER, SMALL	
352	7-623-921-01	WASHER 1.7, NYLONE	
353	3-358-232-01	SPRING (S-P F-R), TORSION	
354	*3-358-204-01	(DECK B)...LEVER (REC SAFETY)	
355	3-358-259-01	(DECK B)...SLIDER (REC)	
356	3-358-258-01	SLIDER (REW)	
357	3-358-257-01	SLIDER (FF)	
358	3-358-256-01	SLIDER (STOP/EJECT)	
359	3-358-260-01	SLIDER (PAUSE)	
360	*3-358-226-01	LEVER (PAUSE LEVER)	
361	*3-358-261-01	SLIDER (HOLDER LOCK)	

No.	Part No.	Description	Remarks
362	*X-3358-213-1	BRACKET (A) ASSY	
363	3-701-437-01	WASHER	
364	X-3358-205-1	FLYWHEEL (A) ASSY	
365	7-685-133-19	SCREW +P 2.6X6 TYPE1	
366	*3-358-249-01	SLIDER (LOCK PLATE)	
367	3-358-214-01	(DECK A)...SPRING (LOCK), TORSION	
	3-358-233-01	(DECK B)...SPRING (REC-LOCK), TORSION	
368	3-358-230-01	BELT (A1)	
369	X-3358-202-1	LEVER (FR ARM) ASSY	
370	*3-358-286-01	LEVER (MOTOR LEVER)	

(4) MECHANISM SECTION-3



No.	Part No.	Description	Remarks
401	3-358-243-01	SPRING (TU-SHUT), TORSION	
402	*3-358-253-01	LEVER (SHUT-OFF LEVER)	
403	X-3358-204-1	LEVER (PINCH LEVER) ASSY	
404	*3-358-215-01	BUSHING (WIRE KIT RETAINER)	
405	3-358-265-01	SLIDER (HEAD PC BOARD A)	
406	3-358-285-01	(DECK A)...GUIDE, TAPE	
407	3-358-234-01	SPRING (AZIMUTH), COMPRESSION	
408	3-358-213-01	SCREW, AZIMUTH	
409	7-685-105-19	TPG +P 2X8, TYPE 2, NON-SLIT	
410	7-623-505-01	LUG, 2	
411	*3-358-251-01	LEVER (TENSION DETECTION ARM)	
412	3-358-208-01	SPRING (SUPPLY), COMPRESSION	
413	*3-358-270-01	(DECK B)...PULLEY (COUNTER PULLEY)	

No.	Part No.	Description	Remarks
414	3-358-248-01	GEAR (SUPPLY REEL)	
415	X-3358-203-1	TABLE (T) ASSY, REEL	
416	3-358-228-01	SPRING, TORSION	
417	*3-358-284-01	GEAR (TU GEAR)	
418	*3-358-252-01	LEVER (TU ARM)	
419	*3-358-255-01	(DECK B)...LEVER (GB LEVER)	
420	*3-358-224-01	GEAR (FF GEAR)	
421	3-358-207-01	SPRING (FF GEAR), COMPRESSION	
422	3-358-227-01	SPRING, LEAF	
HE401	1-543-673-11	HEAD, MAGNETIC (ERASE)	
HP101	1-543-672-11	HEAD, MAGNETIC (REC/PB)	
HRP101	1-543-672-11	HEAD, MAGNETIC (REC/PB)	

SECTION 4
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF: μF, PF: μμF.

RESISTORS
- All resistors are in ohms.
- F: nonflammable

COILS
- MMH: mH, UH: μH

SEMICONDUCTORS
In each case, U: μ, for example:
UA...: μA..., UPA...: μPA...,
UPC...: μPC, UPD...: μPD...

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

• AUS : Australian model

Ref.No.	Part No.	Description			
901	*A-2006-071-A	(W301:US,E,AUS)...MOUNTED PCB, AUDIO			
	*A-2006-072-A	(W306).....MOUNTED PCB, AUDIO			
	*A-2006-138-A	(W301:Canadian)...MOUNTED PCB, AUDIO			
903	1-574-724-11	WIRE, FLAT TYPE (17 CORE)			
904	1-574-723-11	WIRE, FLAT TYPE (7 CORE)			
905	1-548-596-61	COUNTER, TAPE (MIDDLE TYPE)			
906	*1-635-158-11	PC BOARD, SW			
C101	1-162-291-31	CERAMIC	560PF	10%	50V
C102	1-126-059-11	ELECT	10MF	20%	50V
C103	1-162-282-31	CERAMIC	100PF	10%	50V
C104	1-124-994-11	ELECT	100MF	20%	10V
C105	1-136-157-00	FILM	0.022MF	5%	50V
C106	1-126-161-11	ELECT	2.2MF	20%	50V
C107	1-162-291-31	CERAMIC	560PF	10%	50V
C108	1-126-059-11	ELECT	10MF	20%	50V
C109	1-162-282-31	CERAMIC	100PF	10%	50V
C110	1-124-994-11	ELECT	100MF	20%	10V
C111	1-136-157-00	FILM	0.022MF	5%	50V
C112	1-126-161-11	ELECT	2.2MF	20%	50V
C113	1-161-377-00	CERAMIC	0.0047MF	20%	16V
C114	1-162-289-31	CERAMIC	390PF	10%	50V
C115	1-124-045-00	ELECT	4.7MF	20%	50V
C116	1-124-045-00	ELECT	4.7MF	20%	50V
C121	1-126-161-11	ELECT	2.2MF	20%	50V
C126	1-131-587-11	TANTALUM	0.68MF	10%	35V
C127	1-124-257-00	ELECT	2.2MF	20%	50V
C128	1-126-161-11	ELECT	2.2MF	20%	50V
C141	1-136-173-00	FILM	0.47MF	5%	50V
C142	1-124-045-00	ELECT	4.7MF	20%	50V
C143	1-124-994-11	ELECT	100MF	20%	10V
C144	1-126-059-11	ELECT	10MF	20%	50V
C145	1-162-284-31	CERAMIC	150PF	10%	50V
C146	1-136-273-91	FILM	75PF	5%	630V
C191	1-126-161-11	ELECT	2.2MF	20%	50V
C192	1-126-059-11	ELECT	10MF	20%	50V
C201	1-162-291-31	CERAMIC	560PF	10%	50V
C202	1-126-059-11	ELECT	10MF	20%	50V
C203	1-162-282-31	CERAMIC	100PF	10%	50V
C204	1-124-994-11	ELECT	100MF	20%	10V
C205	1-136-157-00	FILM	0.022MF	5%	50V
C206	1-126-161-11	ELECT	2.2MF	20%	50V
C207	1-162-291-31	CERAMIC	560PF	10%	50V
C208	1-126-059-11	ELECT	10MF	20%	50V
C209	1-162-282-31	CERAMIC	100PF	10%	50V
C210	1-124-994-11	ELECT	100MF	20%	10V
C211	1-136-157-00	FILM	0.022MF	5%	50V
C212	1-126-161-11	ELECT	2.2MF	20%	50V
C213	1-161-377-00	CERAMIC	0.0047MF	20%	16V
C214	1-162-289-31	CERAMIC	390PF	10%	50V
C215	1-124-045-00	ELECT	4.7MF	20%	50V
C216	1-124-045-00	ELECT	4.7MF	20%	50V
C221	1-126-161-11	ELECT	2.2MF	20%	50V
C226	1-131-587-11	TANTALUM	0.68MF	10%	35V
C227	1-124-257-00	ELECT	2.2MF	20%	50V
C228	1-126-161-11	ELECT	2.2MF	20%	50V
C241	1-136-173-00	FILM	0.47MF	5%	50V
C242	1-124-045-00	ELECT	4.7MF	20%	50V
C243	1-124-994-11	ELECT	100MF	20%	10V
C244	1-126-059-11	ELECT	10MF	20%	50V
C245	1-162-284-31	CERAMIC	150PF	10%	50V
C246	1-136-273-91	FILM	75PF	5%	630V
C291	1-126-161-11	ELECT	2.2MF	20%	50V
C292	1-126-059-11	ELECT	10MF	20%	50V
C301	1-124-478-11	(W306)...ELECT	100MF	20%	25V
C301	1-126-023-11	(W301)...ELECT	100MF	20%	16V
C302	1-124-478-11	(W306)...ELECT	100MF	20%	25V
C302	1-126-023-11	(W301)...ELECT	100MF	20%	16V
C303	1-162-294-31	CERAMIC	0.001MF	10%	50V
C322	1-126-101-11	ELECT	220MF	20%	10V
C323	1-124-045-00	ELECT	4.7MF	20%	50V
C341	1-126-059-11	(W306)...ELECT	10MF	20%	50V
C341	1-126-301-11	(W301)...ELECT	1MF	20%	50V
C391	1-126-059-11	ELECT	10MF	20%	50V
C401	1-136-562-11	FILM	0.0082MF	5%	630V
C402	1-126-301-11	ELECT	1MF	20%	50V
C403	1-130-482-00	MYLAR	0.0082MF	5%	50V
C404	1-130-478-00	MYLAR	0.0039MF	5%	50V
C405	1-130-478-00	MYLAR	0.0039MF	5%	50V
C406	1-126-300-11	ELECT	0.47MF	20%	50V
C407	1-126-161-11	ELECT	2.2MF	20%	50V
C408	1-141-225-00	CAP, TUNING, TRIMAR			
C501	1-124-045-00	ELECT	4.7MF	20%	50V
C502	1-126-059-11	ELECT	10MF	20%	50V
C601	1-124-962-11	(W306)...ELECT	2200MF	20%	25V
C602	1-126-012-11	ELECT	470MF	20%	16V
C603	1-124-478-11	(W306)...ELECT	100MF	20%	25V
C604	1-124-910-11	(W306)...ELECT	47MF	20%	25V
C605	1-124-910-11	(W306)...ELECT	47MF	20%	25V
C605	1-126-022-11	(W301)...ELECT	47MF	20%	16V
C606	1-126-024-11	ELECT	220MF	20%	16V
C701	1-124-045-00	(W306)...ELECT	4.7MF	20%	50V

Ref.No.	Part No.	Description
CN301	*1-564-507-11	PLUG, CONNECTOR 4P
CN302	*1-564-509-11	PLUG, CONNECTOR 6P
CN321	*1-566-856-11	(W301)...SOCKET, CONNECTOR 5P (SYSTEM CONTROL 2)
CN401	*1-564-505-11	PLUG, CONNECTOR 2P
CN503	*1-566-210-11	(W306)...PIN, CONNECTOR 3P (SYSTEM CONTROL)
CN504	*1-564-505-11	PLUG, CONNECTOR 2P
CN505	*1-564-505-11	PLUG, CONNECTOR 2P
CN601	*1-566-856-11	(W301)...SOCKET, CONNECTOR 5P (SYSTEM CONTROL 1)
CN602	*1-564-337-00	(W306)...PIN, CONNECTOR 3P
CN604	1-568-439-11	SOCKET, CONNECTOR 7P
CN605	1-568-440-11	SOCKET, CONNECTOR 17P
CN608	1-568-438-11	SOCKET, CONNECTOR 17P
CN609	1-568-437-11	SOCKET, CONNECTOR 7P
CN901	*1-564-499-11	PIN, CONNECTOR 6P
CN902	*1-564-500-11	PIN, CONNECTOR 7P
CP1	⚠1-558-945-11	(W306)...CORD, POWER (POLAR.SPT-1)
D191	8-719-304-32	DIODE SEL4214S
D192	8-719-304-32	DIODE SEL4214S
D193	8-719-304-32	DIODE SEL4214S
D194	8-719-304-32	DIODE SEL4214S
D195	8-719-304-32	DIODE SEL4214S
D196	8-719-304-32	DIODE SEL4214S
D291	8-719-304-32	DIODE SEL4214S
D292	8-719-304-32	DIODE SEL4214S
D293	8-719-304-32	DIODE SEL4214S
D294	8-719-304-32	DIODE SEL4214S
D295	8-719-304-32	DIODE SEL4214S
D296	8-719-304-32	DIODE SEL4214S
D401	8-719-107-94	DIODE 1SS202-1
D402	8-719-107-94	DIODE 1SS202-1
D501	8-719-107-94	DIODE 1SS202-1
D504	8-719-107-94	DIODE 1SS202-1
D505	8-719-107-94	DIODE 1SS202-1
D506	8-719-107-94	DIODE 1SS202-1
D507	8-719-107-94	DIODE 1SS202-1
D510	8-719-107-94	DIODE 1SS202-1
D511	8-719-107-94	(W306)...DIODE 1SS202-1
D512	8-719-107-94	DIODE 1SS202-1
D513	8-719-107-94	(W306)...DIODE 1SS202-1
D514	8-719-302-46	DIODE SEL1210S-C
D515	8-719-302-79	(W306)...DIODE SEL1910A-C
D516	8-719-107-94	DIODE 1SS202-1
D517	8-719-107-94	DIODE 1SS202-1
D518	8-719-107-94	DIODE 1SS202-1
D601	8-719-200-77	(W306)...DIODE 10E2N
D602	8-719-200-77	(W306)...DIODE 10E2N
D603	8-719-200-77	(W306)...DIODE 10E2N
D604	8-719-200-77	(W306)...DIODE 10E2N
D605	8-719-933-33	(W306)...DIODE HZS6A1L
D606	8-719-200-77	(W301)...DIODE 10E2N
D607	8-719-200-77	(W301)...DIODE 10E2N
D608	8-719-001-54	(W301:US,E,AUS,W306)...DIODE UZL-11H2
HE401	1-543-673-11	HEAD, MAGNETIC (ERASE)
HP101	1-543-672-11	HEAD, MAGNETIC (REC/PB)
HRP101	1-543-672-11	HEAD, MAGNETIC (REC/PB)

Ref.No.	Part No.	Description
IC191	8-759-917-42	IC IR2E31A
IC291	8-759-917-42	IC IR2E31A
IC301	8-759-800-36	IC LA3160
IC302	8-759-800-36	IC LA3160
IC303	8-759-000-49	IC MC14066BCP
IC322	8-752-031-67	IC CXA1100P
IC341	8-752-038-02	IC CXA1198AP
IC342	8-759-208-06	IC TC4051BPHB
IC501	8-759-140-11	IC UPD4011BC
IC502	8-759-240-01	IC TC4001BP
J321	1-565-258-11	(W306)...JACK, PIN 4P (LINE IN/OUT)
L131	1-410-780-11	INDUCTOR 27MMH
L231	1-410-780-11	INDUCTOR 27MMH
M901	X-3358-212-1	MOTOR (B) ASSY
M902	X-3358-212-1	MOTOR (B) ASSY
Q101	8-729-900-89	TRANSISTOR DTC144ES
Q121	8-729-620-05	TRANSISTOR 2SC2603-EF
Q141	8-729-620-05	TRANSISTOR 2SC2603-EF
Q201	8-729-900-89	TRANSISTOR DTC144ES
Q221	8-729-620-05	TRANSISTOR 2SC2603-EF
Q241	8-729-620-05	TRANSISTOR 2SC2603-EF
Q321	8-729-900-89	TRANSISTOR DTC144ES
Q401	8-729-194-57	TRANSISTOR 2SC945-P
Q402	8-729-194-57	TRANSISTOR 2SC945-P
Q403	8-729-281-52	TRANSISTOR 2SC1815Y
Q404	8-729-900-65	TRANSISTOR DTA144ES
Q405	8-729-900-80	TRANSISTOR DTC114ES
Q501	8-729-900-65	TRANSISTOR DTA144ES
Q502	8-729-900-65	TRANSISTOR DTA144ES
Q503	8-729-900-61	(W306)...TRANSISTOR DTA114ES
Q504	8-729-801-93	(W306)...TRANSISTOR 2SD1387
Q505	8-729-900-89	(W306)...TRANSISTOR DTC144ES
Q506	8-729-900-65	(W306)...TRANSISTOR DTA144ES
Q507	8-729-900-89	TRANSISTOR DTC144ES
Q508	8-729-900-80	(W306)...TRANSISTOR DTC114ES
Q509	8-729-900-65	TRANSISTOR DTA144ES
Q511	8-729-900-80	(W306)...TRANSISTOR DTC114ES
Q512	8-729-900-89	(W306)...TRANSISTOR DTC144ES
Q601	8-729-209-15	(W306)...TRANSISTOR 2SD2012
Q602	8-729-209-15	(W301:US,E,US,W306)..TRANSISTOR 2SD2012
Q603	8-729-141-30	(W306)...TRANSISTOR 2SC3623A-LK
Q605	8-729-620-05	(W306)...TRANSISTOR 2SC2603-EF
R101	1-247-889-00	CARBON 270K 5% 1/4W
R102	1-249-404-00	CARBON 82 5% 1/4W
R103	1-247-882-11	CARBON 130K 5% 1/4W
R104	1-249-426-11	CARBON 5.6K 5% 1/4W
R106	1-247-889-00	CARBON 270K 5% 1/4W
R107	1-249-404-00	CARBON 82 5% 1/4W
R108	1-247-882-11	CARBON 130K 5% 1/4W
R109	1-249-426-11	CARBON 5.6K 5% 1/4W
R110	1-249-430-11	CARBON 12K 5% 1/4W
R111	1-249-431-11	CARBON 15K 5% 1/4W
R112	1-247-887-00	CARBON 220K 5% 1/4W
R113	1-249-441-11	CARBON 100K 5% 1/4W
R114	1-249-441-11	CARBON 100K 5% 1/4W
R121	1-249-435-11	CARBON 33K 5% 1/4W
R122	1-249-417-11	CARBON 1K 5% 1/4W

Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note:
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No.	Part No.	Description			
R129	1-249-421-11	CARBON	2.2K	5%	1/4W
R130	1-249-429-11	CARBON	10K	5%	1/4W
R131	1-249-417-11	CARBON	1K	5%	1/4W
R132	1-249-429-11	CARBON	10K	5%	1/4W
R133	1-249-421-11	CARBON	2.2K	5%	1/4W
R134	1-249-434-11	CARBON	27K	5%	1/4W
R135	1-247-842-11	CARBON	3K	5%	1/4W
R141	1-249-426-11	CARBON	5.6K	5%	1/4W
R142	1-249-421-11	CARBON	2.2K	5%	1/4W
R144	1-249-421-11	CARBON	2.2K	5%	1/4W
R145	1-249-430-11	CARBON	12K	5%	1/4W
R191	1-249-441-11	CARBON	100K	5%	1/4W
R192	1-249-405-11	CARBON	100	5%	1/4W
R201	1-247-889-00	CARBON	270K	5%	1/4W
R202	1-249-404-00	CARBON	82	5%	1/4W
R203	1-247-882-11	CARBON	130K	5%	1/4W
R204	1-249-426-11	CARBON	5.6K	5%	1/4W
R206	1-247-889-00	CARBON	270K	5%	1/4W
R207	1-249-404-00	CARBON	82	5%	1/4W
R208	1-247-882-11	CARBON	130K	5%	1/4W
R209	1-249-426-11	CARBON	5.6K	5%	1/4W
R210	1-249-430-11	CARBON	12K	5%	1/4W
R211	1-249-431-11	CARBON	15K	5%	1/4W
R212	1-247-887-00	CARBON	220K	5%	1/4W
R213	1-249-441-11	CARBON	100K	5%	1/4W
R214	1-249-441-11	CARBON	100K	5%	1/4W
R221	1-249-435-11	CARBON	33K	5%	1/4W
R222	1-249-417-11	CARBON	1K	5%	1/4W
R229	1-249-421-11	CARBON	2.2K	5%	1/4W
R230	1-249-429-11	CARBON	10K	5%	1/4W
R231	1-249-417-11	CARBON	1K	5%	1/4W
R232	1-249-429-11	CARBON	10K	5%	1/4W
R233	1-249-421-11	CARBON	2.2K	5%	1/4W
R234	1-249-434-11	CARBON	27K	5%	1/4W
R235	1-247-842-11	CARBON	3K	5%	1/4W
R241	1-249-426-11	CARBON	5.6K	5%	1/4W
R242	1-249-421-11	CARBON	2.2K	5%	1/4W
R244	1-249-421-11	CARBON	2.2K	5%	1/4W
R245	1-249-430-11	CARBON	12K	5%	1/4W
R291	1-249-441-11	CARBON	100K	5%	1/4W
R292	1-249-405-11	CARBON	100	5%	1/4W
R301	1-247-743-11	CARBON	220	5%	1/2W
R302	1-247-743-11	CARBON	220	5%	1/2W
R321	1-249-433-11	CARBON	22K	5%	1/4W
R322	1-215-460-00	METAL	43K	1%	1/6W
R323	1-247-876-11	CARBON	75K	5%	1/4W
R324	1-249-405-11	CARBON	100	5%	1/4W
R341	1-249-441-11	CARBON	100K	5%	1/4W
R342	1-247-864-11	CARBON	24K	5%	1/4W
R343	1-247-887-00	CARBON	220K	5%	1/4W
R344	1-247-882-11	CARBON	130K	5%	1/4W
R345	1-247-881-00	CARBON	120K	5%	1/4W
R346	1-249-440-11	CARBON	82K	5%	1/4W
R347	1-249-435-11	CARBON	33K	5%	1/4W
R348	1-249-438-11	CARBON	56K	5%	1/4W
R349	1-249-438-11	CARBON	56K	5%	1/4W
R350	1-247-874-11	CARBON	62K	5%	1/4W

Ref.No.	Part No.	Description			
R351	1-249-436-11	CARBON	39K	5%	1/4W
R352	1-247-874-11	CARBON	62K	5%	1/4W
R353	1-247-870-11	CARBON	43K	5%	1/4W
R354	1-249-439-11	CARBON	68K	5%	1/4W
R355	1-249-440-11	CARBON	82K	5%	1/4W
R356	1-247-876-11	CARBON	75K	5%	1/4W
R357	1-247-876-11	CARBON	75K	5%	1/4W
R358	1-249-437-11	CARBON	47K	5%	1/4W
R359	1-249-434-11	CARBON	27K	5%	1/4W
R360	1-249-438-11	CARBON	56K	5%	1/4W
R361	1-247-881-00	CARBON	120K	5%	1/4W
R362	1-249-440-11	CARBON	82K	5%	1/4W
R363	1-247-882-11	CARBON	130K	5%	1/4W
R364	1-247-872-11	CARBON	51K	5%	1/4W
R365	1-249-437-11	CARBON	47K	5%	1/4W
R366	1-249-436-11	CARBON	39K	5%	1/4W
R367	1-249-438-11	CARBON	56K	5%	1/4W
R368	1-249-439-11	CARBON	68K	5%	1/4W
R369	1-247-876-11	CARBON	75K	5%	1/4W
R370	1-249-437-11	CARBON	47K	5%	1/4W
R371	1-247-876-11	CARBON	75K	5%	1/4W
R372	1-249-438-11	CARBON	56K	5%	1/4W
R373	1-249-441-11	CARBON	100K	5%	1/4W
R374	1-247-890-11	CARBON	300K	5%	1/4W
R375	1-249-436-11	CARBON	39K	5%	1/4W
R376	1-247-881-00	CARBON	120K	5%	1/4W
R377	1-247-881-00	CARBON	120K	5%	1/4W
R378	1-247-881-00	CARBON	120K	5%	1/4W
R379	1-249-437-11	CARBON	47K	5%	1/4W
R380	1-249-437-11	CARBON	47K	5%	1/4W
R381	1-249-433-11	CARBON	22K	5%	1/4W
R391	1-249-414-11	CARBON	560	5%	1/4W
R401	1-249-393-11	CARBON	10	5%	1/4W
R402	1-249-433-11	CARBON	22K	5%	1/4W
R403	1-249-433-11	CARBON	22K	5%	1/4W
R404	1-247-858-11	CARBON	13K	5%	1/4W
R405	1-249-417-11	CARBON	1K	5%	1/4W
R406	1-249-433-11	CARBON	22K	5%	1/4W
R408	1-249-430-11	CARBON	12K	5%	1/4W
R409	1-249-426-11	CARBON	5.6K	5%	1/4W
R410	1-249-411-11	CARBON	330	5%	1/4W
R501	1-249-420-11	CARBON	1.8K	5%	1/4W
R502	1-249-408-11	CARBON	180	5%	1/4W
R503	1-249-425-11	CARBON	4.7K	5%	1/4W
R504	1-249-420-11	CARBON	1.8K	5%	1/4W
R505	1-249-408-11	CARBON	180	5%	1/4W
R506	1-249-425-11	CARBON	4.7K	5%	1/4W
R507	1-249-393-11	(W306)...CARBON	10	5%	1/4W
R509	1-249-421-11	(W306)...CARBON	2.2K	5%	1/4W
R510	1-249-427-11	CARBON	6.8K	5%	1/4W
R511	1-249-435-11	CARBON	33K	5%	1/4W
R512	1-249-440-11	CARBON	82K	5%	1/4W
R513	1-249-429-11	CARBON	10K	5%	1/4W
R514	1-249-441-11	CARBON	100K	5%	1/4W
R515	1-249-415-11	CARBON	680	5%	1/4W
R516	1-249-442-11	(W306)...CARBON	510	5%	1/4W
R517	1-249-421-11	(W306)...CARBON	2.2K	5%	1/4W

Ref.No.	Part No.	Description				
R518	1-249-417-11	(W306)...CARBON	1K	5%	1/4W	
R520	1-249-425-11	CARBON	4.7K	5%	1/4W	
R521	1-249-417-11	(W306)...CARBON	1K	5%	1/4W	
R550	1-249-429-11	CARBON	10K	5%	1/4W	
R570	1-247-848-11	(W306)...CARBON	5.1K	5%	1/4W	
R603	1-249-421-11	(W306)...CARBON	2.2K	5%	1/4W	
R604	1-249-421-11	(W306)...CARBON	2.2K	5%	1/4W	
R605	1-249-429-11	(W306)...CARBON	10K	5%	1/4W	
R606	1-249-421-11	(W306)...CARBON	2.2K	5%	1/4W	
R607	1-249-421-11	(W306)...CARBON	2.2K	5%	1/4W	
R608	1-249-411-11	(W301:US,E,AUS,W306) ...CARBON	330	5%	1/4W	
R701 ⚠	1-212-942-00	(W301)...FUSIBLE	2.2	5%	1/2W	F
R702	1-249-417-11	(W306)...CARBON	1K	5%	1/4W	
R703	1-249-421-11	(W306)...CARBON	2.2K	5%	1/4W	
RV101	1-228-994-00	RES, ADJ, CARBON 10K				
RV102	1-228-994-00	RES, ADJ, CARBON 10K				
RV141	1-228-994-00	RES, ADJ, CARBON 10K				
RV201	1-228-994-00	RES, ADJ, CARBON 10K				
RV202	1-228-994-00	RES, ADJ, CARBON 10K				
RV241	1-228-994-00	RES, ADJ, CARBON 10K				
RV321	1-238-262-11	RES, VAR, CARBON 20K/20K (REC LEVEL)				
RV501	1-228-991-00	RES, ADJ, CARBON 2.2K				
RV502	1-228-990-00	RES, ADJ, CARBON 1K				
RV503	1-228-991-00	RES, ADJ, CARBON 2.2K				
RV504	1-228-990-00	RES, ADJ, CARBON 1K				
RY401	1-515-614-11	RELAY				
S301	1-571-628-11	SWITCH, SLIDE (DECK B TAPE SELECT)				
S302	1-571-627-21	SWITCH, SLIDE (DECK A TAPE SELECT)				
S303	1-571-510-11	SWITCH, PUSH (1 KEY)(DOLBY NR)				
S501	1-571-510-11	SWITCH, PUSH (1 KEY)(DUBBING SPEED)				
S601	1-570-393-21	(W306)...SWITCH, PUSH (1 KEY)(POWER)				
S902	1-571-736-11	SWITCH, LEAF (A FWD)				
S904	1-571-736-11	SWITCH, LEAF (B FWD)				
S905	1-571-736-11	SWITCH, LEAF (B REC)				
T401	1-433-303-11	TRANSFORMER, BIAS OSCILLATION				
T601 ⚠	1-449-256-11	(W306)...TRANSFORMER, POWER				

ACCESSORY & PACKING MATERIAL

	1-558-649-11	(W306)...CORD (WITH CONNECTOR) 3P
	1-559-533-11	(W306)...CORD, CONNECTION
	3-703-450-01	(W306)...INSTRUCTION
*	3-704-343-01	SHEET (STANDARD), PROTECTION
	3-751-753-21	(W306)...MANUAL, INSTRUCTION

Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note:
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

9-955-684-11

Sony Corporation
Audio Group

English
90D1673-1
Printed in Japan
©1990.4
Published by Customer Relations and Service Group